Operating Manual - English

FUJITSU

PRIMERGY TX100 S3 Core Edition

Headless Server

Edition August 2011

Comments… Suggestions… Corrections…

The User Documentation Department would like to know your opinion of this manual. Your feedback helps us optimize our documentation to suit your individual needs.

Feel free to send us your comments by e-mail to manuals@ts.fujitsu.com.

Certified documentation according to DIN EN ISO 9001:2008

To ensure a consistently high quality standard and user-friendliness, this documentation was created to meet the regulations of a quality management system which complies with the requirements of the standard DIN EN ISO 9001:2008.

cognitas. Gesellschaft für Technik-Dokumentation mbH
www.cognitas.de

Copyright and Trademarks

Copyright © 2011 Fujitsu Technology Solutions GmbH.

All rights reserved.
Delivery subject to availability; right of technical modifications reserved.

All hardware and software names used are trademarks of their respective manufacturers.

– The contents of this manual may be revised without prior notice.
– Fujitsu assumes no liability for damages to third party copyrights or other rights arising from the use of any information in this manual.
– No part of this manual may be reproduced in any without the prior written permission of Fujitsu.

Microsoft, Windows, Windows Server, and Hyper V are trademarks or registered trademarks of Microsoft Corporation in the USA and other countries.

Intel and Xeon are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the USA and other countries.

Before reading this manual

For your safety

This manual contains important information for safely and correctly using this product.

Carefully read the manual before using this product. Pay particular attention to the accompanying manual "Safety Notes and Regulations" and ensure these safety notes are understood before using the product. Keep this manual and the manual "Safety Notes and Regulations" in a safe place for easy reference while using this product.

Radio interference

This product is a "Class A" ITE (Information Technology Equipment). In a domestic environment this product may cause radio interference, in which case the user may be required to take appropriate measures. VCCI-A

Aluminum electrolytic capacitors

The aluminum electrolytic capacitors used in the product's printed circuit board assemblies and in the mouse and keyboard are limited-life components. Use of these components beyond their operating life may result in electrolyte leakage or depletion, potentially causing emission of foul odor or smoke.

As a guideline, in a normal office environment (25°C) operating life is not expected to be reached within the maintenance support period (5 years). However, operating life may be reached more quickly if, for example, the product is used in a hot environment. The customer shall bear the cost of replacing replaceable components which have exceeded their operating life. Note that these are only guidelines, and do not constitute a guarantee of trouble-free operation during the maintenance support period.

High safety use

This product has been designed and manufactured for general uses such as general office use, personal use, domestic use and normal industrial use. It has not been designed or manufactured for uses which demand an extremely high level of safety and carry a direct and serious risk to life or body if such safety cannot be ensured.

These uses include control of nuclear reactions in nuclear power plants, automatic airplane flight control, air traffic control, traffic control in mass transport systems, medical devices for life support, and missile guidance control in weapons systems (hereafter, "high safety use"). Customers should not use this product for high safety use unless measures are in place for ensuring the level of safety demanded of such use. Please consult the sales staff of Fujitsu if intending to use this product for high safety use.

Measures against momentary voltage drop

This product may be affected by a momentary voltage drop in the power supply caused by lightning. To prevent a momentary voltage drop, use of an AC uninterruptible power supply is recommended.

(This notice follows the guidelines of Voltage Dip Immunity of Personal Computer issued by JEITA, the Japan Electronics and Information Technology Industries Association.)

Technology controlled by the Foreign Exchange and Foreign Trade Control Law of Japan

Documents produced by Fujitsu may contain technology controlled by the Foreign Exchange and Foreign Trade Control Law of Japan. Documents which contain such technology should not be exported from Japan or transferred to non-residents of Japan without first obtaining authorization in accordance with the above law.

Harmonic Current Standards

This product conforms to harmonic current standard JIS C 61000-3-2.

Only for the Japanese market: About SATA hard disk drives

The SATA version of this server supports hard disk drives with SATA / BC-SATA storage interfaces. Please note that the usage and operation conditions differ depending on the type of hard disk drive used.

Please refer to the following internet address for further information on the usage and operation conditions of each available type of hard disk drive:

http://primeserver.fujitsu.com/primergy/harddisk/

Contents

1 Introduction 11

1.1 Concept and target groups for this manual 11
1.2 Documentation overview 12
1.3 Notational conventions 13

2 Functional overview 15

2.1 Features 15
2.2 Server specification 18

3 Installation steps, overview 23

4 Important information 25

4.1 Safety instructions 25
4.2 ENERGY STAR 33
4.3 CE conformity 33
4.4 FCC Class A Compliance Statement 34
4.5 Transporting the server 35
4.6 Environmental protection 35

5 Hardware installation 37

5.1 Unpacking the server 38
5.2 Setting up the server 39
5.3 Connecting devices to the server 40
5.4 Connecting the server to the mains 41
5.5 Notes on connecting / disconnecting cables 42

6 Starting up and operation 43

6.1 Opening the server 43

6.2 Control elements and indicators 44
6.2.1 Server front 44
6.2.1.1 Control elements 45
6.2.1.2 Indicators on the control panel 45
6.2.2 Server rear 46
6.2.2.1 Indicators on the connector panel 46
6.2.2.2 Push button mains switch 47

6.3 Initial operation 48
6.3.1 Step 1: Checking network connectivity 48
6.3.2 Step 2: Switching the server on 48
6.3.3 Step 3: Establishing a Remote Desktop connection 49
6.3.3.1 Connecting to your server 49
6.3.3.2 Running the Remote Desktop software 51
6.3.4 Step 4: Completing the operating system installation 52
6.3.4.1 Language Customization 53
6.3.4.2 Network configuration (optional) 53
6.3.4.3 Providing computer name and domain 55
6.3.5 Step 5: Activate AIS Connect 57

6.4 Diagnostics 61
6.4.1 Accessing the server using a VNC connection 61
6.4.2 Gathering diagnostic information 64

6.5 Recovering / resetting your server 70
6.5.1 Operating system recovery 71
6.5.2 Factory reset 73

6.6 Configuring the onboard SATA controller 75

6.7 Switching the server off 76

6.8 Other On/Off options 76

6.9 Cleaning the server 77

7 Property and data protection 79

8 Troubleshooting and tips 81

8.1 Power-on indicator remains dark 81
8.2 Incorrect date and time 82
8.3 Optical drive not cannot read discs 82
8.4 Added drive reported as defective 82
8.5 Services or directories / files on Headless server are no longer accessible for clients 83
8.6 ServerView Operations Manager reports errors 84
8.7 The server switches itself off 84
8.8 Remote Desktop connection fails 85
8.9 VNC connection fails 86
8.10 Operating system recovery with 4-HDD configurations . . . 87
8.11 Power-on indicator reports an error 88

Contents

1 Introduction

The PRIMERGY TX100 S3 Core Edition server is an Intel-based server for workgroups and small networks. The server is suitable for use as a file server and also as an application, information or Internet server.

Thanks to its highly developed hardware and software components, the PRIMERGY TX100 S3 Core Edition server offers a high level of data security and availability.

The “headless” operating concept enbles you to run and maintain your server without a monitor, keyboard or mouse attached, saving up to 37 percent in acquisition costs.

The PRIMERGY TX100 S3 Core Edition server comes pre-installed with the Windows Server 2008 R2 Foundation operating system for small businesses with up to 15 client users.

Moreover, the TX100 S3 Core Edition is incredibly silent making it an excellent choice for any office environment.

1.1 Concept and target groups for this manual

This operating manual describes how to install, set up and operate your server.

This operating manual is intended for those responsible for installing the hardware and ensuring that the system runs smoothly. It contains all the information you need to put your PRIMERGY TX100 S3 Core Edition into operation.

To understand the various expansion options, you will need to be familiar with the fields of hardware and data transmission and you will require a basic knowledge of the underlying operating system.

1.2 Documentation overview

More information on your PRIMERGY TX100 S3 Core Edition server can be found in the following documents:

– "Quick Start Hardware - PRIMERGY TX100 S3 Core Edition" leaflet (only included as a printed copy)

– "ServerView Suite - Overview & Installation" DVD booklet (only included with the ServerView Suite as a printed copy)

– "Safety Notes and Regulations" manual
" 安全上のご注意 " for the Japanese market

– "Warranty" manual
" 保証書 " for the Japanese market

– "Returning used devices" manual and "Service Desk" leaflet
" サポート＆サービス " for the Japanese market

– "PRIMERGY TX100 S3 Core Edition Server" Upgrade and Maintenance Manual

– "System Board D3009 for PRIMERGY TX100 S3" Technical Manual

PRIMERGY manuals are available in PDF format on the ServerView Suite DVD 2. The ServerView Suite DVD 2 is part of the ServerView Suite supplied with every server.

If you no longer have the ServerView Suite DVDs, you can obtain the relevant current versions using the order number U15000-C289 (the order number for the Japanese market: please refer to the configurator of the server *http://primeserver.fujitsu.com/primergy/system/*).

The PDF files of the manuals can also be downloaded free of charge from the Internet. The overview page showing the online documentation available on the Internet can be found using the URL (for EMEA market): *http://manuals.ts.fujitsu.com*. The PRIMERGY server documentation can be accessed using the *Industry standard servers* navigation option.

For the Japanese market:

Please refer to the following URL for the latest product manuals:
http://primeserver.fujitsu.com/primergy/manual/

Before using the product, please check for additional information that may be available under the following URL:
http://primeserver.fujitsu.com/primergy/products/note/

Further sources of information:

– ServerView Suite Glossary on the ServerView Suite DVD 2
– Documentation for the boards and drives
– Operating system documentation
– Information files in your operating system

1.3 Notational conventions

The following notational conventions are used in this manual:

Text in italics	indicates commands or menu items
`fixed font`	indicates system output
`semi-bold fixed font`	indicates text to be entered by the user
"Quotation marks"	indicate names of chapters and terms that are being emphasized.
►	describes activities that must be performed in the order shown.
Abc	indicates keys on the keyboard
CAUTION!	Pay particular attention to texts marked with this symbol! Failure to observe this warning may endanger your life, destroy the system or lead to the loss of data.
	indicates additional information, notes and tips.

2 Functional overview

This section provides information on the features and technical data of the PRIMERGY TX100 S3 Core Edition server. For information on key characteristics and layout of the system board, see "System Board D3009 for PRIMERGY TX100 S3"Technical Manual.

2.1 Features

Intel® Celeron®, Xeon®, Pentium®, or Core i3 processor

The server has an Intel® Celeron®, Xeon®, Pentium®, or Core i3 processor for high-speed data processing.

System board

System board features are described in the "System Board D3009 for PRIMERGY TX100 S3" Technical Manual.

Hard disk drives

The PRIMERGY TX100 S3 Core Edition server can accommodate up to four SAS / SATA hard disk drives. By default, it comes equipped with two to four 3.5-inch SATA hard disk drives.

Onboard SATA controller

The onboard SATA controller supports up to four SATA hard disk drives. The LSI Embedded MegaRAID software (SATA Software RAID) supports RAID levels 0,1 and 10.

By default, two hard disk drives (drives 1 and 2) are combined into a RAID 1 array.

Configuring additional hard disk drives (drives 3 and 4) requires ServerView RAID Manager. For further information, please refer to the "ServerView Suite RAID Management" user manual, available on your ServerView Suite DVD 2 or from the Fujitsu Technology Solutions manuals server at *http://manuals.ts.fujitsu.com*.

Accessible drives

The first (top) bay contains the server's DVD drive.

The 5.25-inch bay below is available for one additional accessible drive (CD/DVD drives or a magnetic tape drive).

The accessible drives cannot be replaced during operation.

Power supply

The server has a permanently installed power supply unit that adjusts automatically to any mains voltage in the range 100 V - 240 V.

High level of availability and data security

When memory data is accessed, 1-bit errors are identified in the main memory and automatically corrected with the error correcting code (ECC) method.

ASR&R (Automatic Server Reconfiguration and Restart) restarts the system in the event of an error and automatically "hides" the defective system components.

The onboard SATA controller supports different RAID levels and increases the availability and data security of the system.

Server management

Server management is implemented using the ServerView Operations Manager software supplied from Fujitsu Technology Solutions.

The ServerView Operations Manager enables the management of all PRIMERGY servers in the network via a central console. The ServerView Operations Manager supports the following functions:

- Round-the-clock monitoring, regardless of server status
- Temperature monitoring of the CPU and the surrounding area
- Detailed status and error reports for processors and main memory
- Watchdog timer for Automatic Server Reconfiguration and Restart (ASR&R) in the event that memory modules or processors fail
- Watchdog timer for monitoring the operating system with ASR&R

Further information on the ServerView Operations Manager is provided in the associated documentation.

Maintenance and Recovery Manager

The Maintenance & Recovery DVD included with your PRIMERGY TX100 S3 Core Edition server allows you to gather diagnostic information using PrimeCollect and to recover or reset your server. For further information, please refer to section "Recovering / resetting your server" on page 70.

Service and support

PRIMERGY servers are easy to maintain and modular, thus enabling quick and simple maintenance.

The handles and locks (touch point) used to exchange components are colored green to ensure simple and immediate recognition.

In order to prevent the components from being damaged by incorrect handling when they are being installed and removed, the areas of all components that can be touched without damaging them are also marked green.

The Flash EPROM program supplied with the Fujitsu utilities supports a fast BIOS update.

ServerView Remote Management

ServerView Remote Management is the remote management solution from Fujitsu for PRIMERGY servers. ServerView Remote Management and the relevant hardware components integrated on the system board allow remote monitoring and maintenance as well as fast restoration of operation in the event of errors.

Remote monitoring and maintenance avoids time-consuming and costly on-site repairs and reduces service costs. This leads to a reduction in the total cost of ownership and an excellent return on investment for the remote management solution.

Using ServerView Remote Management features requires a client computer connected to your server and running ServerView Operations Manager.

2.2 Server specification

This section explains the specifications for the server. The specifications for this server are liable to be updated without any notice. Please be forewarned.

System Board

System board type	D3009
Chipset	Intel® C202

Processor

Processor quantity and type	1x Intel® Celeron®/Xeon®/Pentium®/Core i3 processor

Memory Modules Configuration

Memory slots	4
Memory slot type	DIMM (DDR3)
Memory capacity (min. - max.)	2 GB - 32 GB
Memory protection	ECC
Memory notes	1333 MHz memory modules with 2, 4, or 8 GB

Interfaces

USB connectors	9 x USB 2.0 (2x front, 6x rear, 1x internal for backup device
Graphics (15-pin)	1 x VGA
Serial 1 (9-pin)	1 x serial RS-232
LAN / Ethernet (RJ-45)	2 x Gbit/s Ethernet

Onboard or integrated controllers

Serial ATA total	6
RAID Controller	4 port SATA with RAID 0 / 1 for HDDs
SATA Controller	Intel® C202
LAN Controller	Intel® 82574L and Intel® 82579LM onboard, 2 x 10/100/1000 Mbit/s, PXE-Boot by LAN via PXE-Server, Teaming supported
Trusted Platform Module (TPM)	Infineon / 1.2 (option)

Slots

PCI-Express Gen2 x1	1x (mechanically x4 notched)
PCI-Express Gen2 x4	1x (mechanically x4 notched)
PCI-Express Gen2 x8	1x
PCI-Express Gen2 x8	1x (mechanically x16)

Drive bays

Hard disk bay configuration	4x 3,5-inch easy change SATA
Accessible drives	2 (one bay is occupied by DVD/DVD-RW, 5.25-inch)

Operating Panel

Operating buttons	On/off switch
Status LEDs	Power (green)

Dimensions / Weight

Tower (W x D x H)	175 x 419 x 395 mm
Weight	max. 14 kg (depending on configuration)

Ventilation clearance

At least 200 mm on the front and rear.

Ambient conditions

Environment class 3K2 Environment class 2K2	EN 60721 / IEC 721 Part 3-3 EN 60721 / IEC 721 Part 3-2
Temperature: Operation (3K2) Transport (2K2)	 10 °C ... 35 °C -25 °C ... 60 °C
Humidity	10% ... 85% (non condensing)

Condensation during operation must be avoided!

Noise level

Sound power level L_{WAd} (ISO 9296)	< tbd B (standby) < tbd B (operation)
Sound pressure level at adjacent position L_{pAm} (ISO 9296)	< tbd dB (A) (standby) < tbd dB (A) (operation)

Electrical values

Power supply configuration	1x standard power supply
Max. output	250 W
Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Rated current	max. 4.0 A – 2.0 A (100 V / 240 V)
Power supply configuration	1x 0-Watt power supply
Max. output	250 W
Rated voltage range	100 V - 240 V
Rated frequency range	50 Hz - 60 Hz
Rated current	max. 5.0 A – 2.5 A (100 V / 240 V)

Compliance with regulations and standards

Product safety and ergonomics	
International	IEC 60950-1 2ed.
Europe	
Safety	EN 60950-1 2ed. EN 50371 EN 50392
Ergonomics	ISO 9241-3 EN 2941-3 EK1-ITB 2003:2007
USA / Canada	CSA-C22.2 No. 60950-1-07 2ed. UL 60950-1 2ed.
Taiwan	CNS 14336
China	GB 4943
Electromagnetic compatibility	
International	CISPR 22
Europe	EN 55022 Class A EN 55024 EN 61000-3-2 EN 61000-3-3 ETSI 300386
USA / Canada	47CFR part 15 Class A / ICES-003
Taiwan	CNS 13438 Class A
China	GB 9245 / GB 17625
Japan	VCCI Class A / JEITA
Korea	KN 22 / KN 24
CE marking to EU directives	Low Voltage Directive 2006/95/EC Electromagnetic compatibility 2004/108/EC

3 Installation steps, overview

This chapter contains an overview of the steps necessary to install your server. Links take you to sections where you can find more detailed information about the respective steps:

- First of all, it is essential that you familiarize yourself with the safety information in chapter "Important information" on page 25.
- Transport the server to the place where you want to set it up.
- Unpack all parts, check the contents of the package for visible transport damage and check whether the items delivered match the details on the delivery note (see section "Unpacking the server" on page 38).
- Make sure that all necessary manuals (see "Documentation overview" on page 12) are available; print out the PDF files if required.
- Components that have been ordered additionally may be delivered loose with the server. Install these in the server as described in the supplied documentation.
- Set up the server (see section "Setting up the server" on page 39).
- Wire the server. Follow the instructions in sections "Connecting devices to the server" on page 40 and "Notes on connecting / disconnecting cables" on page 42.
- Connect the server to the mains (see section "Connecting the server to the mains" on page 41).
- Familiarize yourself with the controls and indicators on the front and rear of the server (see section "Control elements and indicators" on page 44).
- Configure your server as described in section "Initial operation" on page 48.

4 Important information

In this chapter you will find essential information regarding safety when working on your server.

4.1 Safety instructions

The following safety instructions are also provided in the manual "Safety Notes and Regulations" or " 安全上のご注意 ".

This device meets the relevant safety regulations for IT equipment. If you have any questions about whether you can install the server in the intended environment, please contact your sales outlet or our customer service team.

CAUTION!

- The actions described in this manual shall be performed by technical specialists. A technical specialist is a person who is trained to install the server including hardware and software.
- Repairs to the device that do not relate to CSS failures shall be performed by service personnel. Please note that unauthorized interference with the system will void the warranty and exempt the manufacturer from all liability.
- Any failure to observe the guidelines in this manual, and any improper repairs could expose the user to risks (electric shock, energy hazards, fire hazards) or damage the equipment.
- Before installing/removing internal options to/from the server, turn off the server, all peripheral devices, and any other connected devices. Also unplug all power cords from the power outlet. Failure to do so can cause electric shock.

Before starting up

CAUTION!

- During installation and before operating the device, observe the instructions on environmental conditions for your device (see "Ambient conditions" on page 20).
- If the server has been moved from a cold environment, condensation may form both inside and on the outside of the machine.

  Wait until the server has acclimatized to room temperature and is absolutely dry before starting it up. Material damage may be caused to the server if this requirement is not met.
- Only transport the server in the original packaging or in packaging that protects it from impacts and jolts.

Installation and operation

CAUTION!

- This unit should not be operated in ambient temperatures above 35 °C.
- If the unit is integrated into an installation that draws power from an industrial power supply network with an IEC309 connector, the power supply's fuse protection must comply with the requirements for non-industrial power supply networks for type A connectors.
- The unit automatically adjusts itself to a mains voltage in a range of 100 V - 240 V. Ensure that the local mains voltage lies within these limits.
- This device must only be connected to properly grounded power outlets or insulated sockets of the rack's internal power supply with tested and approved power cords.
- Ensure that the device is connected to a properly grounded power outlet close to the device.

CAUTION!

- Ensure that the power sockets on the device and the properly grounded power outlets are freely accessible.
- The On/Off button or the main power switch (if present) does not isolate the device from the mains power supply. To disconnect it completely from the mains power supply, unplug all network power plugs from the properly grounded power outlets.
- Always connect the server and the attached peripherals to the same power circuit. Otherwise you run the risk of losing data if, for example, the server is still running but a peripheral device (e.g. memory subsystem) fails during a power outage.
- Data cables must be adequately shielded.
- Ethernet cabling has to comply with EN 50173 and EN 50174-1/2 standards or ISO/IEC 11801 standard respectively. The minimum requirement is a Category 5 shielded cable for 10/100 Ethernet, or a Category 5e cable for Gigabit Ethernet.
- Route the cables in such a way that they do not create a potential hazard (make sure no-one can trip over them) and that they cannot be damaged. When connecting the server, refer to the relevant instructions in this manual.
- Never connect or disconnect data transmission lines during a storm (risk of lightning hazard).
- Make sure that no objects (e.g. jewelry, paperclips etc.) or liquids can get inside the server (risk of electric shock, short circuit).
- In emergencies (e.g. damaged casing, controls or cables, penetration of liquids or foreign bodies), switch off the server immediately, remove all power plugs and contact your sales outlet or customer service team.

CAUTION!

- Proper operation of the system (in accordance with IEC 60950-1/2 resp. EN 60950-1/2) is only ensured if the casing is completely assembled and the rear covers for the installation slots have been fitted (electric shock, cooling, fire protection, interference suppression).
- Only install system expansions that satisfy the requirements and rules governing safety and electromagnetic compatibility and those relating to telecommunication terminals. If you install other expansions, they may damage the system or violate the safety regulations. Information on which system expansions are approved for installation can be obtained from our customer service center or your sales outlet.
- The components marked with a warning notice (e.g. lightning symbol) may only be opened, removed or exchanged by authorized, qualified personnel. Exception: CSS components can be replaced.
- The warranty is void if the server is damaged during installation or replacement of system expansions.
- Only set screen resolutions and refresh rates that are specified in the operating manual for the monitor. Otherwise, you may damage your monitor. If you are in any doubt, contact your sales outlet or customer service center.
- Before installing/removing internal options to/from the server, turn off the server, all peripheral devices, and any other connected devices. Also unplug all power cords from the outlet. Failure to do so can cause electric shock.
- Do not damage or modify internal cables or devices. Doing so may cause a device failure, fire, or electric shock.
- Devices inside the server remain hot after shutdown. Wait for a while after shutdown before installing or removing internal options.
- The circuit boards and soldered parts of internal options are exposed and can be damaged by static electricity. Before handling them, first touch a metal part of the server to discharge static electricity from your body.
- Do not touch the circuitry on boards or soldered parts. Hold the metallic areas or the edges of the circuit boards.

CAUTION!

- Install the screw removed during installation/detaching Internal Options in former device/position. To use a screw of the different kind causes a breakdown of equipment.
- The installation indicated on this note is sometimes changed to the kind of possible options without notice.

Batteries

CAUTION!

- Incorrect replacement of batteries may lead to a risk of explosion. The batteries may only be replaced with identical batteries or with a type recommended by the manufacturer (see the PRIMERGY TX100 S3 Core Edition Server Upgrade and Maintenance manual).
- Do not throw batteries into the trash can.
- Batteries must be disposed of in accordance with local regulations concerning special waste.
- Replace the lithium battery on the system board in accordance with the instructions in the PRIMERGY TX100 S3 Core Edition Server Upgrade and Maintenance manual.
- All batteries containing pollutants are marked with a symbol (a crossed-out garbage can). In addition, the marking is provided with the chemical symbol of the heavy metal decisive for the classification as a pollutant:

  Cd Cadmium
  Hg Mercury
  Pb Lead

Working with CDs/DVDs/BDs and optical drives

When working with optical drives, these instructions must be followed.

CAUTION!

- Only use CDs/DVDs/BDs that are in perfect condition, in order to prevent data loss, equipment damage and injury.
- Check each CD/DVD/BD for damage, cracks, breakages etc. before inserting it in the drive.

  Note that any additional labels applied may change the mechanical properties of a CD/DVD/BD and cause imbalance.

  Damaged and imbalanced CDs/DVDs/BDs can break at high drive speeds (data loss).

  Under certain circumstances, sharp CD/DVD/BD fragments can pierce the cover of the optical drive (equipment damage) and can fly out of the device (danger of injury, particularly to uncovered body parts such as the face or neck).
- High humidity and airborne dust levels are to be avoided. Electric shocks and/or server failures may be caused by liquids such as water, or metallic items, such as paper clips, entering a drive.
- Shocks and vibrations are also to be avoided.
- Do not insert any objects other than the specified CDs/DVDs/BDs.
- Do not pull on, press hard, or otherwise handle the CD/DVD/BD tray roughly.
- Do not disassemble the optical drive.
- Before use, clean the optical disk tray using a soft, dry cloth.
- As a precaution, remove disks from the optical drive when the drive is not to be used for a long time. Keep the optical disk tray closed to prevent foreign matter, such as dust, from entering the optical drive.
- Hold CDs/DVDs/BDs by their edges to avoid contact with the disk surface.
- Do not contaminate the CD/DVD/BD surface with fingerprints, oil, dust, etc. If dirty, clean with a soft, dry cloth, wiping from the center to the edge. Do not use benzene, thinners, water, record sprays, antistatic agents, or silicone-impregnated cloth.

- Be careful not to damage the CD/DVD/BD surface.
- Keep the CDs/DVDs/BDs away from heat sources.
- Do not bend or place heavy objects on CDs/DVDs/BDs.
- Do not write with ballpoint pen or pencil on the label (printed) side.
- Do not attach stickers or similar to the label side. Doing so may cause rotational eccentricity and abnormal vibrations.
- When a CD/DVD/BD is moved from a cold place to a warm place, moisture condensation on the CD/DVD/BD surface can cause data read errors. In this case, wipe the CD/DVD/BD with a soft, dry cloth then let it air dry. Do not dry the CD/DVD/BD using devices such as a hair dryer.
- To avoid dust, damage, and deformation, keep the CD/DVD/BD in its case whenever it is not in use.
- Do not store CDs/DVDs/BDs at high temperatures. Areas exposed to prolonged direct sunlight or near heating appliances are to be avoided.

You can prevent damage from the optical drive and the CDs/DVDs/BDs, as well as premature wear of the disks, by observing the following suggestions:

– Only insert disks in the drive when needed and remove them after use.
– Store the disks in suitable sleeves.
– Protect the disks from exposure to heat and direct sunlight.

Laser information

The optical drive complies with IEC 60825-1 laser class 1.

CAUTION!

The optical drive contains a light-emitting diode (LED), which under certain circumstances produces a laser beam stronger than laser class 1. Looking directly at this beam is dangerous.

Never remove parts of the optical drive casing!

Modules with Electrostatic-Sensitive Devices

Modules with electrostatic-sensitive devices are identified by the following sticker:

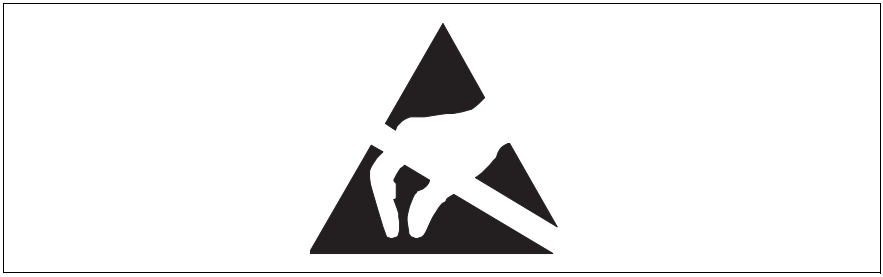


Figure 1: ESD label

When you handle components fitted with ESDs, you must always observe the following points:

- Switch off the system and remove the power plugs from the power outlets before installing or removing components with ESDs.
- You must always discharge static build-up (e.g. by touching a grounded object) before working with such components.
- Any devices or tools that are used must be free of electrostatic charge.
- Wear a suitable grounding cable that connects you to the external chassis of the system unit.
- Always hold components with ESDs at the edges or at the points marked green (touch points).
- Do not touch any connectors or conduction paths on an ESD.
- Place all the components on a pad which is free of electrostatic charge.

i For a detailed description of how to handle ESD components, see the relevant European or international standards (EN 61340-5-1, ANSI/ESD S20.20).

Other important information:

- During cleaning, observe the instructions in section "Cleaning the server" on page 77.
- Keep this operating manual and the other documentation (such as the technical manual, documentation DVD) close to the device. All documentation must be included if the equipment is passed on to a third party.

4.2 ENERGY STAR

Products that have been certified compliant with ENERGY STAR and identified as such are in full compliance with the specification at shipping. Note that energy consumption can be affected by software that is installed or any changes that are made to the hardware configuration or BIOS or energy options subsequently. In such cases, the properties guaranteed by ENERGY STAR can no longer be assured.

The "ServerView Operations Manager" user guide contains instructions for reading out measurement values, including those relating to current energy consumption and air temperatures. Either the Performance Monitor or the Task Manager can be used to read out CPU utilization levels.

4.3 CE conformity

The system complies with the requirements of the EC directives 2004/108/EC regarding "Electromagnetic Compatibility" and 2006/95/EC "Low Voltage Directive". This is indicated by the CE marking (CE = Communauté Européenne).

4.4 FCC Class A Compliance Statement

If there is an FCC statement on the device, it applies to the products covered in this manual, unless otherwise specified herein. The statement for other products will appear in the accompanying documentation.

NOTE:

This equipment has been tested and found to comply with the limits for a "Class A" digital device, pursuant to Part 15 of the FCC rules and meets all requirements of the Canadian Interference-Causing Equipment Standard ICES-003 for digital apparatus. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in strict accordance with the instructions, may cause harmful interference to radio communications. However, there is no warranty that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Fujitsu is not responsible for any radio or television interference caused by unauthorized modifications of this equipment or the substitution or attachment of connecting cables and equipment other than those specified by Fujitsu. The correction of interferences caused by such unauthorized modification, substitution or attachment will be the responsibility of the user.

The use of shielded I/O cables is required when connecting this equipment to any and all optional peripheral or host devices. Failure to do so may violate FCC and ICES rules.

WARNING:

This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

4.5 Transporting the server

CAUTION!

Only transport the server in its original packaging or in packaging that protects it from impacts and jolts. Do not unpack the server until it is at its installation location.

If you need to lift or transport the server, ask other people to help you.

4.6 Environmental protection

Environmentally-friendly product design and development

This product has been designed in accordance with the Fujitsu standard for "environmentally friendly product design and development". This means that key factors such as durability, selection and labeling of materials, emissions, packaging, ease of dismantling and recycling have been taken into account.

This saves resources and thus reduces the harm done to the environment. Further information can be found at:

– *http://ts.fujitsu.com/products/standard_servers/index.html* (for the EMEA market)
– *http://primeserver.fujitsu.com/primergy/concept/* (for the Japanese market)

Energy-saving information

Devices that do not need to be constantly switched on should be switched off until they are needed as well as during long breaks and after completion of work.

Packaging information

This packaging information doesn’t apply to the Japanese market.

Do not throw away the packaging. You may need it later for transporting the system. If possible, the equipment should only be transported in its original packaging.

Information on handling consumables

Please dispose of printer consumables and batteries in accordance with the applicable national regulations.

In accordance with EU directives, batteries must not be disposed of with unsorted domestic waste. They can be returned free of charge to the manufacturer, dealer or an authorized agent for recycling or disposal.

All batteries containing pollutants are marked with a symbol (a crossed-out garbage can). They are also marked with the chemical symbol for the heavy metal that causes them to be categorized as containing pollutants:

Cd Cadmium
Hg Mercury
Pb Lead

Labels on plastic casing parts

Please avoid sticking your own labels on plastic parts wherever possible, since this makes it difficult to recycle them.

Returns, recycling and disposal

Please handle returns, recycling and disposal in accordance with local regulations.

The device must not be disposed of with domestic waste. This device is labeled in compliance with European directive 2002/96/EC on waste electrical and electronic equipment (WEEE).

This directive sets the framework for returning and recycling used equipment and is valid across the EU. When returning your used device, please use the return and collection systems available to you. Further information can be found at *http://ts.fujitsu.com/recycling*.

Details regarding the return and recycling of devices and consumables within Europe can also be found in the "Returning used devices" manual, via your local Fujitsu branch or from our recycling center in Paderborn:

Fujitsu Technology Solutions
Recycling Center
D-33106 Paderborn

Tel. +49 5251 525 1410
Fax +49 5251 525 32 1410

5 Hardware installation

CAUTION!

- Follow the safety instructions in the chapter "Important information" on page 25.
- Do not expose the server to extreme environmental conditions (see "Ambient conditions" on page 20). Protect the server from dust, humidity and heat.
- Make sure that the server is acclimatized for the time indicated in this table before putting it into operation.

Temperature difference (°C)	Minimum acclimatization time (hours)
5	3
10	5
15	7
20	8
25	9
30	10

Table 1: Acclimatization time

In the table "Acclimatization time", the temperature difference refers to the difference between the operating environment temperature and the temperature to which the server was exposed previously (outside, transport or storage temperature).

5.1 Unpacking the server

CAUTION!

Follow the safety instructions in "Important information" on page 25. (For the Japanese market, please refer to " 安全上のご注意 ".)

Do not unpack the server until it is at its installation location.

- ► Transport the server to the place where you want to set it up.
- ► Unpack all individual parts.

  Keep the original packaging in case you want to transport the server again (applies only to EMEA market).
- ► Check the delivery for any damage during transport.
- ► Check whether the items delivered match the details on the delivery note.
- ► Notify your supplier immediately should you discover that the items delivered do not correspond to the delivery note.

5.2 Setting up the server

- ► Transport the server to the place where you want to set it up.
- ► Unpack the server (see section "Unpacking the server").
- ► Set up the server.

CAUTION!

- – The device must be protected from direct sunlight.
- – The required minimum distances for operation and maintenance areas must be adhered to.
- – The server must be accessible at the rear for connection to other devices (e.g. memory subsystem).
- – The mains plug must be accessible easily and safely.
- – There must be a clearance of at least 200 mm in front of and behind the server to ensure adequate ventilation of the subsystem.

- ► Wire the server. Follow the instructions in sections "Connecting devices to the server" on page 40 and "Notes on connecting / disconnecting cables" on page 42.
- ► Connect the server to the mains (see section "Connecting the server to the mains" on page 41).

5.3 Connecting devices to the server

The connectors for external devices are on the front and rear of the server. The additional connectors available on your server depend on the expansion cards installed. For further information refer to the “PRIMERGY TX100 S3 Core Edition Server" Upgrade and Maintenance Manual. The standard connectors are indicated by symbols and color coding:

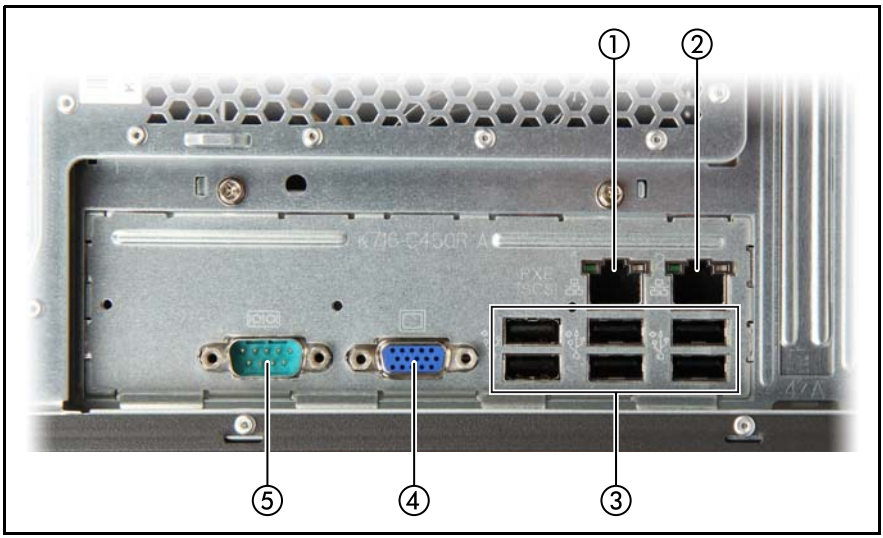


Figure 2: Connector panel on the rear side

1	Standard LAN1 connector
2	Standard LAN2 connector
3	USB connectors (x 6)
4	Video connector (blue) (not used)
5	Serial connector COM1 (turquoise)

Some of the devices that can be connected may require special drivers (see the documentation for the connected device).

► Connect the data cables to the server and peripherals.

Two additional USB connectors are located on the front of the server (see figure 5 on page 44).

5.4 Connecting the server to the mains

The server is equipped with an integrated power supply unit.

CAUTION!

The server is automatically set to a mains voltage in the range 100 V - 240 V. You may only operate the server if its rated voltage range corresponds to the local mains voltage.

- ► Connect the power cord to the server power supply unit.
- ► Connect the mains plug to a grounded mains outlet in the in-house power supply network.

Securing the power cord

Figure 3: Securing the power cord

- ► Loop the cable past the cable tie mounting bracket as shown.
- ► Close the cable tie around the power cord (1) and pull tight (2) to secure the power cord.

5.5 Notes on connecting / disconnecting cables

CAUTION!

Always read the documentation supplied with the device you wish to connect.

Never connect, or disconnect cables during a thunderstorm.

Never pull on a cable when disconnecting it. Always take hold of the cable by the plug.

Follow the sequence described below to connect or disconnect external devices to or from the server:

Be sure to wait for 10 seconds or more after shutdown before turning the server on.

Connecting cables

- ► Turn off all power and equipment switches.
- ► Disconnect all power plugs from the properly grounded power outlets.
- ► Connect all cables to the server and peripherals.
- ► Plug all data communication cables into the utility sockets.
- ► Plug all power cords into the properly grounded power outlets.

Disconnecting cables

- ► Turn off all power and equipment switches.
- ► Disconnect all power plugs from the properly grounded power outlets.
- ► Unplug all data communication cables from the utility sockets.
- ► Disconnect the relevant cables from the server and all the peripherals.

For connecting or disconnecting LAN cables, the server does not need to be powered off. To avoid loss of data, teaming functionality has to be enabled.

6 Starting up and operation

CAUTION!

Follow the safety instructions in chapter "Important information" on page 25.

6.1 Opening the server

Figure 4: Removing the cover

- ► Pull up on the locking lever (1).
- ► Fold open the side cover (2).
- ► Remove the side cover (3).

6.2 Control elements and indicators

6.2.1 Server front

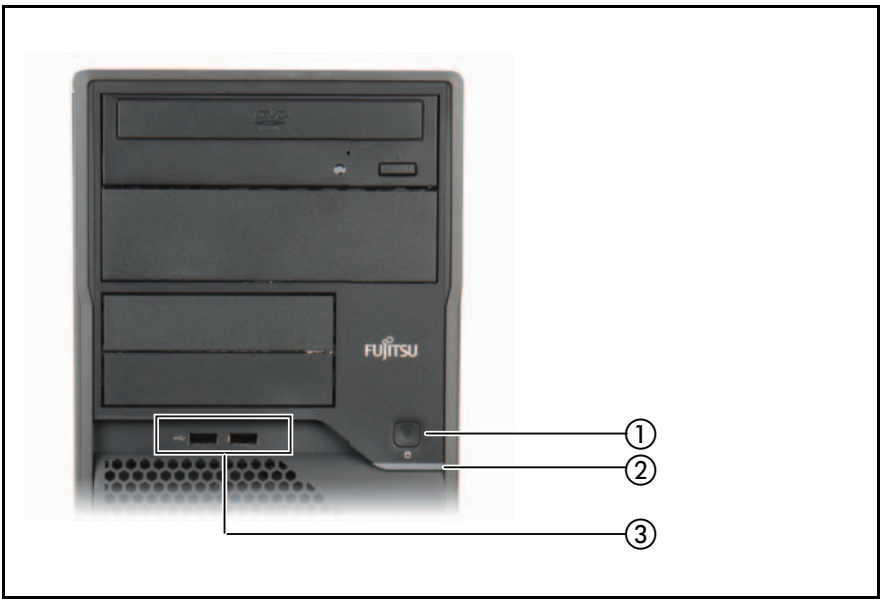


Figure 5: Front panel

1	Power-on indicator / On/Off button	3	USB connectors (x2)
2	HDD activity indicator		

6.2.1.1 Control elements

On/Off button

When the system is switched off, it can be switched on again by pressing the On/Off button.

When the system is operating, pressing the On/Off button will switch off the system.

CAUTION!

Risk of loss of data!

The On/Off button does not disconnect the server from the mains voltage. To disconnect from the mains completely, remove the power plug(s).

6.2.1.2 Indicators on the control panel

Power indicator (green)

Lights green when the server is switched on.

Flashes green with a frequency of 2 Hz to indicate errors at an early BIOS POST phase (for further information, refer to chapter "Troubleshooting and tips" on page 81).

Flashes green with a frequency of ½ Hz to indicate errors at a late BIOS POST phase (for further information, refer to chapter "Troubleshooting and tips" on page 81).

HDD activity indicator (green)

Lights up green when an internal drive (HDD or backup drive) is being accessed.

6.2.2 Server rear

6.2.2.1 Indicators on the connector panel

LAN indicators

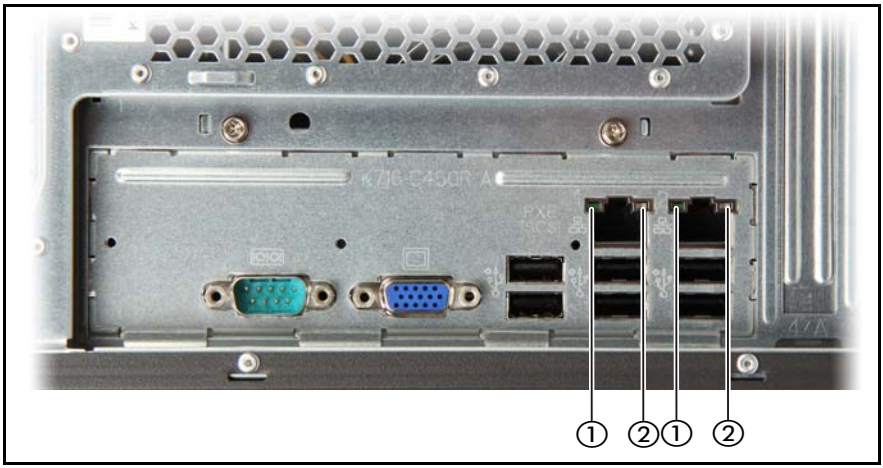


Figure 6: Indicators on the connector panel: LAN indicators

1	LAN link / transfer	**Steady green signal** when a LAN connection exists. **Remains dark** when no LAN connection exists. **Flashes green** when LAN transfer takes place.
2	LAN speed	**Steady yellow signal** in the event of a LAN transfer rate of 1 Gbit/s **Steady green signal** in the event of a LAN transfer rate of 100 Mbit/s. **Remains dark** in the event of a LAN transfer rate of 10 Mbit/s.

6.2.2.2 Push button mains switch

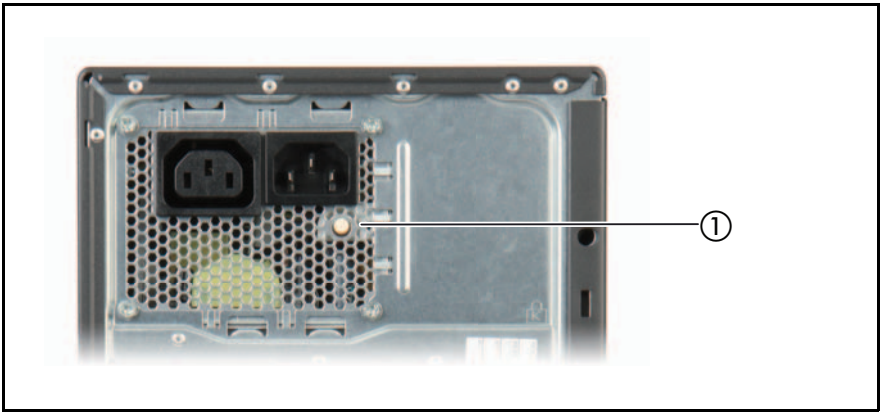


Figure 7: Push button mains switch

The PRIMERGY TX100 S3 server family offers a Zero Watt operating mode in which the system does not draw any power when switched off or hibernating. The push button mains switch (1) on the power supply unit is employed in the Zero Watt concept but does not apply to the headless operating mode.

For further details on the zero Watt functionality, please refer to the "PRIMERGY TX100 S3 (Standard)" operating manual available on your ServerView Suite DVD 2 or from the Fujitsu Technology Solutions manuals server at *http://manuals.ts.fujitsu.com*.

For the Japanese market please use the following URL:
http://primeserver.fujitsu.com/primergy/manual/

6.3 Initial operation

The following sections will guide you through the initial configuration of your PRIMERGY TX100 S3 Core Edition server.

6.3.1 Step 1: Checking network connectivity

Ensure that your server is connected to a client computer running the Microsoft Windows operating system:

– **LAN connection**
  The server is connected to a network switch or router

– **Direct cable connection**
  The server is connected to a client computer:

  – Network connections up to 100 Mbit/s: use Ethernet cross-over cable
  – Gigabit Network connections: use standard Category-5e Ethernet cable

Make sure that your network connection uses onboard Ethernet port 1 (see section "Connecting devices to the server" on page 40).

6.3.2 Step 2: Switching the server on

When switching on your PRIMERGY TX100 S3 Core Edition server, it will perform a hardware test and then boot the pre-installed Microsoft Windows Server 2008 R2 Foundation operating system.

CAUTION!

The On/Off button does not disconnect the server from the mains voltage. To completely disconnect it from the mains voltage, remove the power plug from the socket.

The power-on indicator (item 1 in figure 5 on page 44) is off (standby mode).

► Boot your client computer if not already running.

Make sure that Remote Desktop connections are permitted for the client computer on your network (e.g. set up your firewall to allow exceptions). The host computer (your PRIMERGY TX100 S3 Core Edition server) has already been set up to allow Remote Desktop connections.

- ► Press the On/Off button (item 1 in figure 5 on page 44) on your PRIMERGY TX100 S3 Core Edition server.
- ► Wait until the DVD tray opens, indicating that the startup process is complete.

  When starting up your server for the first time, the boot and initialization process may take up to 20 minutes.

6.3.3 Step 3: Establishing a Remote Desktop connection

In order to connect your client computer to your PRIMERGY TX100 S3 Core Edition server, please proceed as follows:

6.3.3.1 Connecting to your server

You can connect to your server by specifying either its name or IP address.

The IP (Internet Protocol) address is a 32-bit number that uniquely identifies a computer or other device on a TCP/IP network. TCP/IP is the protocol that your computer uses to communicate with other computers on your network.

- ► Determine your network configuration.

  Please read the following sections thoroughly to help you decide, how to establish the remote connection:

  – **Connect by computer name**

    If DHCP (Dynamic Host Configuration Protocol) is enabled on your network, the PRIMERGY TX100 S3 Core Edition server is automatically configured to obtain an IP address from the DHCP server. DHCP doesn't require you to manually configure TCP/IP settings, even if you move your computer to another location.

    DHCP is a standard protocol that allows a server to dynamically distribute IP addressing and configuration information to clients (e.g. IP address, subnet mask, default gateway, DNS / WINS server addresses). The computer name is resolved to the IP address using Domain Name Service (DNS).

In this case, connect the client to your server by its default name:

Default computer name:	HEADLESS

– **Connect by IP address**

If DHCP is not available on your network or if your server is directly connected to the client computer the following default network settings are applied:

Default IP address:	192.168.10.10
Default subnet mask:	255.255.255.0
Default gateway:	192.168.10.1

► Configure your client's static IP address on subnet 192.168.10.x with subnet mask 255.255.255.0.

Example: 192.168.10.20
Subnet mask: 255.255.255.0

For further details on how to configure network settings, refer to section "Network configuration (optional)" on page 53.

– It is highly recommended to take note of the original network setting values (e.g. IP address, subnet mask, default gateway) before altering the network configuration.

– Ensure that the IP address is not your server's default address (192.168.10.10) and is not otherwise in use on the network.

The subnet mask is used by the TCP/IP protocol to determine whether a host is on the local subnet or on a remote network.

6.3.3.2 Running the Remote Desktop software

- On your client computer, click *Start*, point to *All Programs*, and then point to *Accessories*.
- In the *Accessories* menu, point to *Communications*, and then click *Remote Desktop Connection*.

  If the *Remote Desktop Connection* shortcut is not listed in the start menu at the specified location, proceed as follows:

  - On your client computer, click *Start*, point to *Run*, and then type `mstsc` in the *Open* box.
  - Click *OK*.

The *Remote Desktop Connection* window will open.

- In the *Computer* box, type the default IP address or the default computer name of your PRIMERGY TX100 S3 Core Edition server.
- Click *Connect*.
- Click on the *Administrator* icon, type the default password of the Headless server into the password field, and press Enter to log into the preinstalled operating system.

Default user name:	`Administrator`
Default password:	`TX100preinstalled`

You will be taken to the *Initial Configuration Tasks* pane.

6.3.4 Step 4: Completing the operating system installation

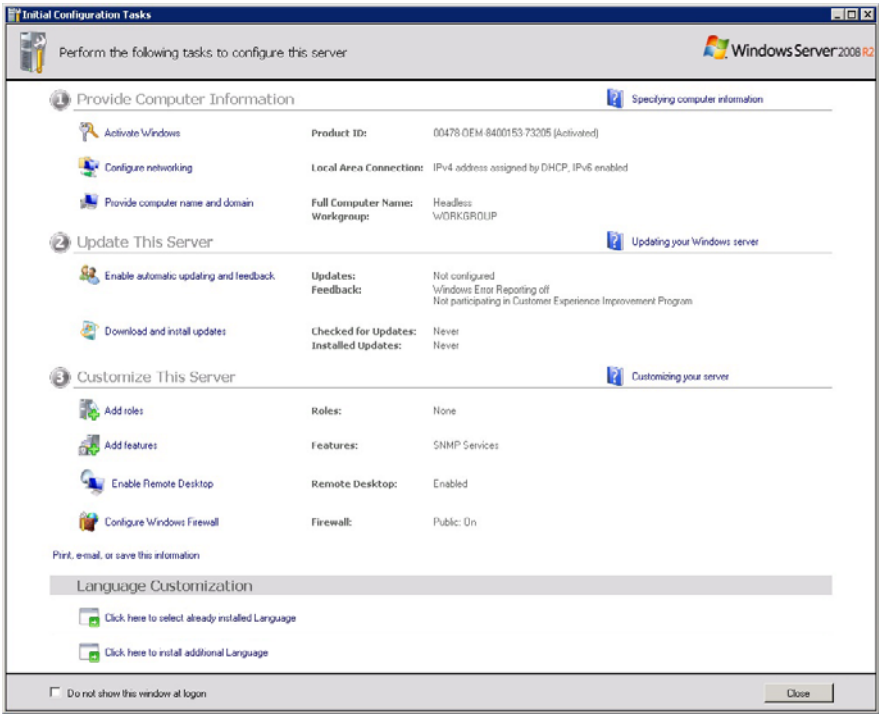


Figure 8: Initial Configuration Tasks pane

Do not select the *Do not show this window at logon* check box, otherwise the *Initial Configuration Tasks* pane will not open after logging in. If you have disabled the pane by mistake, you can reopen it as follows:

► Click *Start*, click *Run*, type `oobe.exe`, and then click *OK*.

Please note, that the *Initial Configuration Tasks* pane is meant only to complete the server installation. Use Server Manager for daily system management tasks:

► Click *Start*, point to *Administrative Tools*, and then click *Server Manager*.

6.3.4.1 Language Customization

This section does not apply to the Japanese market.

By default, the operating system comes with six preinstalled language options: English, Japanese, German, Spanish, French, and Russian.

If your preferred language is among the preinstalled language options, proceed as follows:

- Under *Language Customization*, click *Click here to select already installed Language*.
  The *Region and Language* windows will appear.
- From the *Keyboards and Languages* tab, choose your language and press *OK*.
- Log out and log in again for the new language settings to take effect.

If your preferred language is not among the preinstalled language options, proceed as follows:

- Under *Language Customization*, click *Click here to install additional Language*.
  The *Region and Language* windows will appear.
- Choose your preferred language from the subsequent menu and click *Install language*.
- Wait until the installation process is complete.
  The *Region and Language* windows will appear.
- From the *Keyboards and Languages* tab, choose your language and press *OK*.
- Log out and log in again for the new language settings to take effect.

6.3.4.2 Network configuration (optional)

If your server is already successfully operating in the destined network with a DHCP assigned IP address, no further configuration steps are required. Please proceed to section "Providing computer name and domain" on page 55.

If your server has been connected to a client computer outside the destination network for configuration purposes, you will have to configure your TCP/IP network settings to match the destination network.

To enable DHCP, assign a static IP address or change other TCP/IP settings, follow these steps:

► Under *Provide Computer Information*, click *Configure Networking*.

If the *Initial Configuration Tasks* pane is not available, proceed as follows:

► Open *Network Connections* by clicking the *Start* button, and then clicking *Control Panel*.

► In the search box, type `adapter`, and then, under *Network and Sharing Center*, click *View network connections*.

► Right-click the connection that you want to change, and then click *Properties*. If you're prompted for an administrator password or confirmation, enter the password or provide confirmation.

► In the *Networking* tab under *This connection uses the following items*, click either *Internet Protocol Version 4 (TCP/IPv4)* or *Internet Protocol Version 6 (TCP/IPv6)*, and then click *Properties*.

► Configure IP settings to match your destination network:

Please note that by changing the IP address, the Remote Desktop connection will be interrupted and the remote window will freeze. Close the window and re-establish the Remote Desktop connection as described in section "Step 3: Establishing a Remote Desktop connection" on page 49.

Make sure you use your new IP address instead of the default values (see section "Connecting to your server" on page 49) if you made configuration changes.

– It is highly recommended to take note of the original network setting values (e.g. IP address, subnet mask, default gateway) before altering the network configuration.

– **Please take extreme care when changing network configuration settings!**

Incorrect network settings may render the Headless server inaccessible! It will be impossible to connect to the server or to correct the error remotely!

If the Remote Desktop connection should fail, even after integrating the server into its destination network, please refer to section "Operating system recovery" on page 71.

To specify IPv4 IP address settings, do one of the following:

- ► To get IP settings automatically using DHCP, click *Obtain an IP address automatically*, and then click *OK*.
- ► To specify an IP address, click *Use the following IP address*, and then, in the *IP address*, *Subnet mask*, and *Default gateway* boxes, type the IP address settings.

To specify IPv6 IP address settings, do one of the following:

- ► To get IP settings automatically using DHCP, click *Obtain an IPv6 address automatically*, and then click *OK*.
- ► To specify an IP address, click *Use the following IPv6 address*, and then, in the *IPv6 address*, *Subnet prefix length*, and *Default gateway* boxes, type the IP address settings.

To specify DNS server address settings, do one of the following:

- ► To get a DNS server address automatically using DHCP, click *Obtain DNS server address automatically*, and then click *OK*.
- ► To specify a DNS server address, click *Use the following DNS server addresses*, and then, in the *Preferred DNS server* and *Alternate DNS server* boxes, type the addresses of the primary and secondary DNS servers.
- ► To change advanced DNS, WINS, and IP settings, click *Advanced*.

► After integrating your PRIMERGY TX100 S3 Core Edition server into the destination network, use any connected client to check whether your server is available in the local network neighborhood.

6.3.4.3 Providing computer name and domain

It is highly recommended to change the default computer name in order to eliminate the possibility of a naming conflict with existing network objects.

► Under *Provide Computer Information*, click *Provide computer name and domain*.

If the *Initial Configuration Tasks* pane is not available, proceed as follows:

- ► Click *Start*, right-click *My Computer*, and then click *Properties*.
- ► Click *Change Settings*.

- In the *Computer Name* tab add a computer description (optional) and click *Change* to alter the default computer name and domain settings.
- Enter your preferred computer name.
- In the *Member of* section change or confirm the workgroup name.
  By default, your server has been joined to a workgroup called "Workgroup".
- In order to join your server to a domain, select the radio button next to *Domain* and enter the preferred domain name.

  When joining your PRIMERGY TX100 S3 Core Edition server to a domain, please consider the following restrictions of the pre-installed Windows Server 2008 R2 Foundation operating system:

  – Your server can only be joined at the root of the domain and can't be used to create child domains. In case joined to a child domain or used to create a child domain the server will display a warning and if not rectified will shut down in 10 days.

  – The domain containing Windows Server 2008 R2 Foundation must not have trust relations with another domain. In case the domain does have trust relationships the server will display a warning message and if not rectified will shut down in 10 days.

- Click *OK*.

  Once you click the *OK* button you will receive a message that the computer must be restarted. Close the *System Properties* menu, then click *Restart Now* to apply the changes.

6.3.5 Step 5: Activate AIS Connect

This section does not apply to the Japanese market.

AIS Connect (Auto Immune Systems) real-time remote access services allow Fujitsu Technology Solutions support specialists to access your server using a secure internet connection in order to analyze and resolve technical problems quickly and efficiently.

The AIS Connect client software has been pre-installed on your PRIMERGY TX100 S3 Core Edition server and should be activated when first logging in.

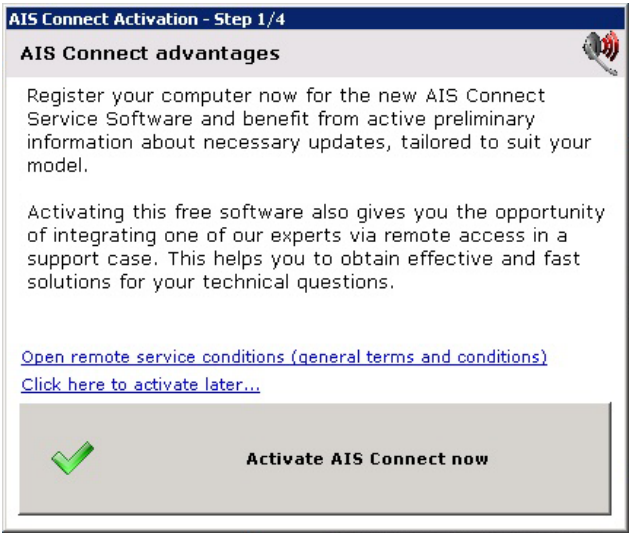

AIS Connect Activation - Step 1/4
AIS Connect advantages
Register your computer now for the new AIS Connect Service Software and benefit from active preliminary information about necessary updates, tailored to suit your model.
Activating this free software also gives you the opportunity of integrating one of our experts via remote access in a support case. This helps you to obtain effective and fast solutions for your technical questions.
Open remote service conditions (general terms and conditions)
Click here to activate later...
Activate AIS Connect now

Figure 9: AIS Connect client activation (A)

- Click *Open remote service conditions* for privacy and data protection information.
- After reading the privacy and data protection information click on *Activate AIS Connect now*.

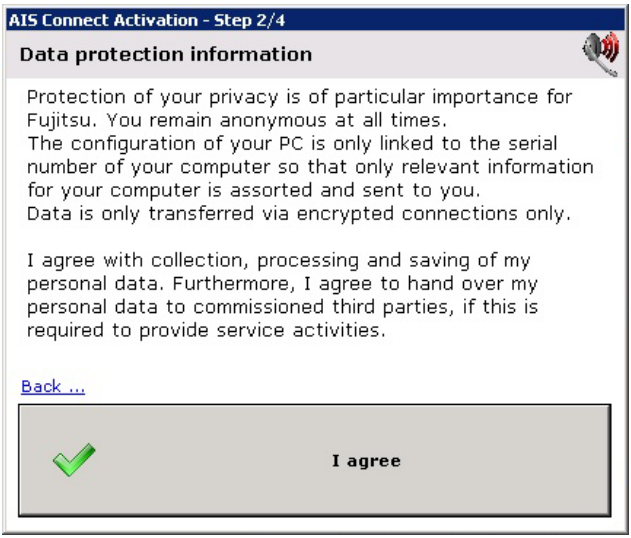

AIS Connect Activation - Step 2/4
Data protection information
Protection of your privacy is of particular importance for Fujitsu. You remain anonymous at all times.
The configuration of your PC is only linked to the serial number of your computer so that only relevant information for your computer is assorted and sent to you.
Data is only transferred via encrypted connections only.
I agree with collection, processing and saving of my personal data. Furthermore, I agree to hand over my personal data to commissioned third parties, if this is required to provide service activities.
Back ...
I agree

Figure 10: AIS Connect client activation (B)

► Click *I agree* to confirm your agreement to the terms and conditions or *Back* to return to the previous wizard screen.

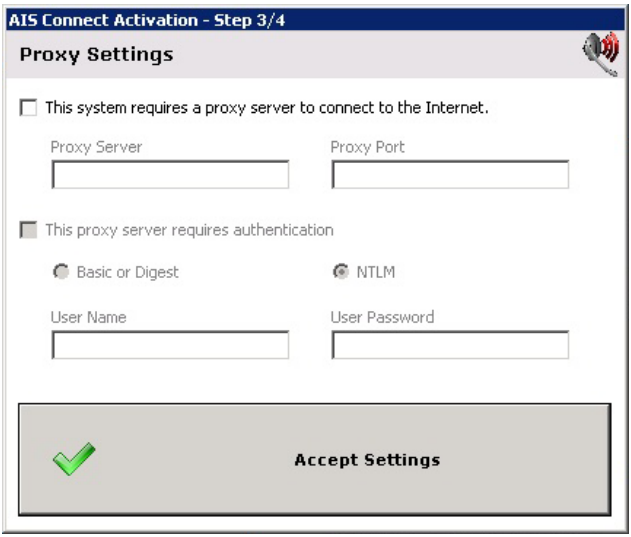


Figure 11: AIS Connect client activation (C)

- ► If your system requires a proxy server to connect to the internet, enter your network settings.
- ► Click *Accept Settings*.

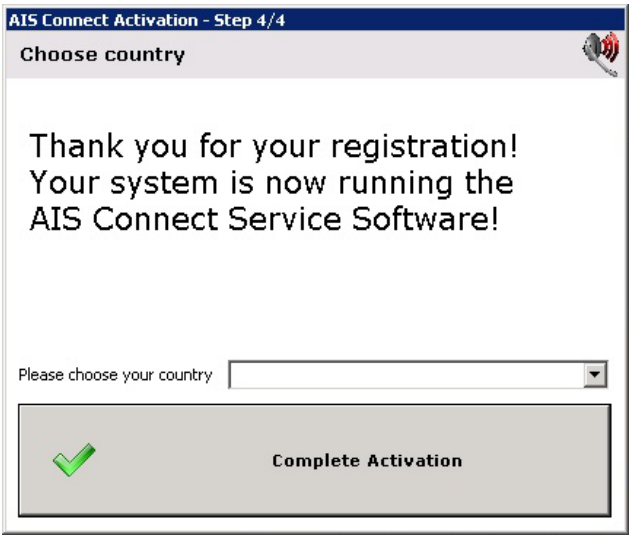

AIS Connect Activation - Step 4/4
Choose country
Thank you for your registration!
Your system is now running the
AIS Connect Service Software!
Please choose your country
Complete Activation

Figure 12: AIS Connect client activation (D)

- ► Choose your country from the drop box.
- ► Click *Complete Activation*.

> **i** If no internet connection is available at the completion of the activation, AIS Connect will try to submit the activation information for a few minutes before closing the window.

An AIS Connect task bar icon will appear.

> **i** By default, the AIS Connect client will automatically load on startup.

- ► Right-click on the AIS Connect icon, then choose *Set VNC Password* from the context menu.

► Enter a strong VNC password (up to 8 characters) and click *OK*.

> As a matter of principle a remote connection to your server is only possible if the Fujitsu service employee knows your personal VNC remote access password. It is recommended to change your password after it has been used.

Further AIS Connect functions available from the task bar context menu

Messages
: Display messages sent to your system through AIS Connect.

Set Remote Policy
: Accept or decline incoming remote access requests.

Make Smart Poll
: Send a connection request.

> This function is only to be activated upon instruction from a member of the support staff.

Close VNC Session
: Close a VNC based remote connection that has been established to your system.

6.4 Diagnostics

6.4.1 Accessing the server using a VNC connection

Use a Virtual Network Computing (VNC) connection to access your server for performing the following tasks:

– Diagnostics and troubleshooting
– Recovering the operating system
– Resetting the server

You will need a USB stick with a spare capacity of at least 128 MB in order to access the server using a VNC connection.

► If the server is still running, press the On/Off button to properly shut down the operating system and switch off the server.

If the server does not shut down properly, press and hold the On/Off button for five seconds, until the server switches off.

► Ensure that your server is connected to a client computer on your network (running the Microsoft Windows operating system) through your server's onboard Ethernet port 1 (see section "Connecting devices to the server" on page 40).

► If DHCP is not available on your network on startup, your Headless server obtains a static standard IP address (see section "Connecting to your server" on page 49).

In case of static IP configurations, ensure that your client's IP address is on subnet 192.168.10.x (although not your server's default address 192.168.10.10) with subnet mask 255.255.255.0.

► Press the On/Off button to switch on the server.

► Right after switching on the server, insert the Maintenance & Recovery DVD into the DVD drive and close the drive tray.

Your server will now boot from the Maintenance & Recovery DVD.

► Wait until the DVD tray opens, indicating that the boot process is complete. This may take up to three minutes.

► Connect the USB stick to the server.

A VNC client and remote connection data are automatically transfered to the USB stick. This will take about 15 seconds.

- Disconnect the USB stick from the server.
- Connect the USB stick to the client computer.
- In *Windows Explorer* select the USB device, point to the *Recovery* directory and double-click *Recovery.cmd*.

The *Maintenance and Recovery Manager* user interface will open:

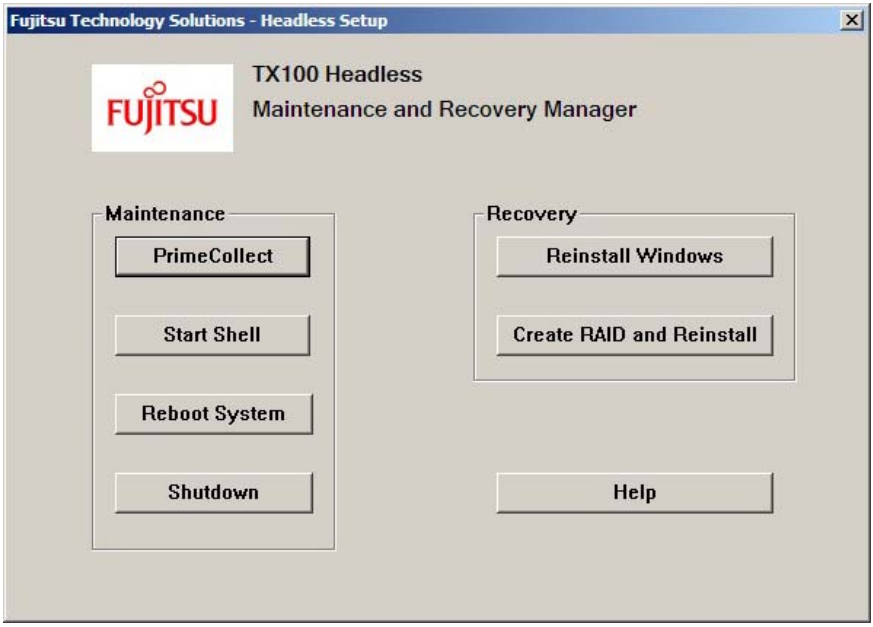


Figure 13: Maintenance and Recovery Manager user interface

The Maintenance and Recovery Manager offers the following functionality:

Maintenance section

Action items from the *Maintenance* section will not modify the system.

– *PrimeCollect*

  Use the Fujitsu Technology Solutions PrimeCollect tool to gather hardware and software information on your server. For a detailed description, please refer to section "Gathering diagnostic information" on page 64.

– *Start Shell*

  Open a command line interface.

  This option is intended for experienced users only.

– *Reboot System / Shutdown*

  Reboot or shut down your system.

Recovery section

Action items from the *Recovery* section will modify the system!

– *Reinstall Windows*

  Recover the operating system while preserving data on separate partitions. This recovery option is described in section "Operating system recovery" on page 71.

– *Create RAID and Reinstall*

  Recover the operating system while restoring the server to factory settings. This recovery option is described in section "Factory reset" on page 73.

Help section

The help page offers a short description of all Maintenance and Recovery Manager menu options.

6.4.2 Gathering diagnostic information

PrimeCollect enables you to collect and store information about the hardware and software of your PRIMERGY server. In case of a problem, PrimeCollect facilitates and quickens error diagnostics by providing service technicians with relevant log, event and configuration files.

For a listing of the gathered output files, please refer to the PrimeCollect user guide available on your ServerView Suite DVD 2 or from the Fujitsu Technology Solutions manuals server at *http://manuals.ts.fujitsu.com*.

For the Japanese market please use the following URL: *http://primeserver.fujitsu.com/primergy/manual/*

► Establish a VNC connection as described in section "Accessing the server using a VNC connection" on page 61.

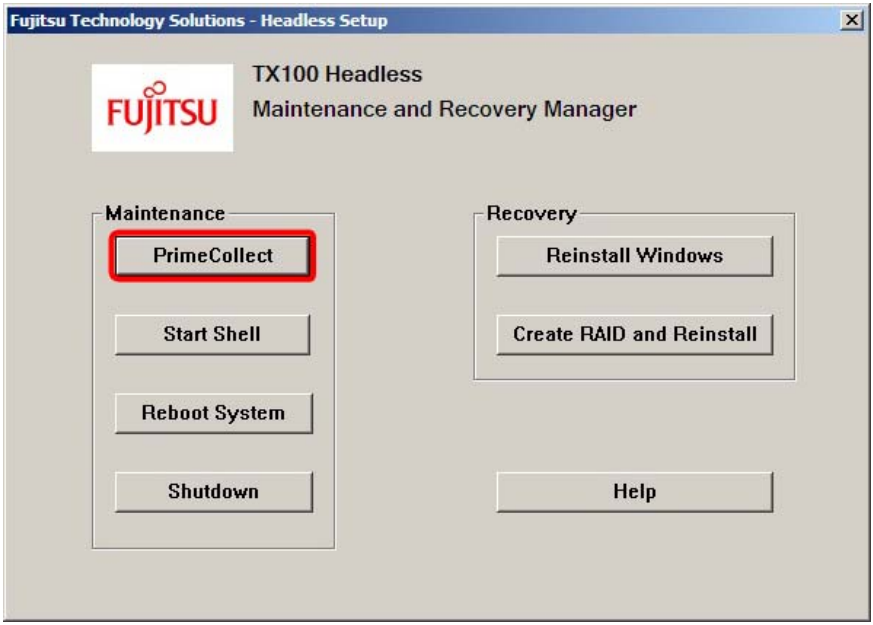


Figure 14: Maintenance and Recovery Manager user interface - PrimeCollect

► Select *PrimeCollect* from the *Maintenance* section in the Maintenance and Recovery Manager menu.

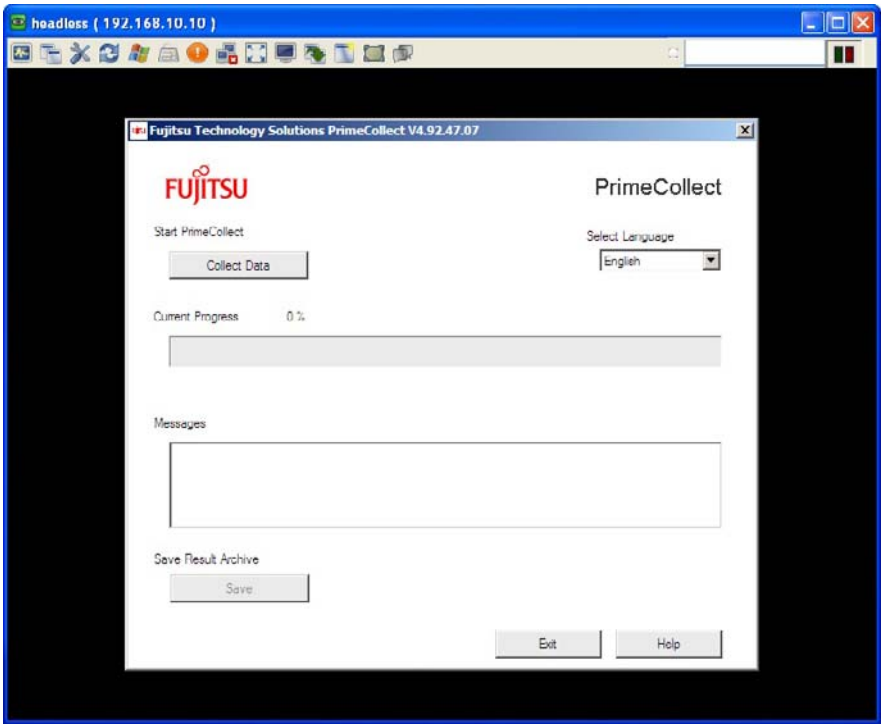


Figure 15: PrimeCollect - collecting data

► Click *Collect Data* to start collecting system information.

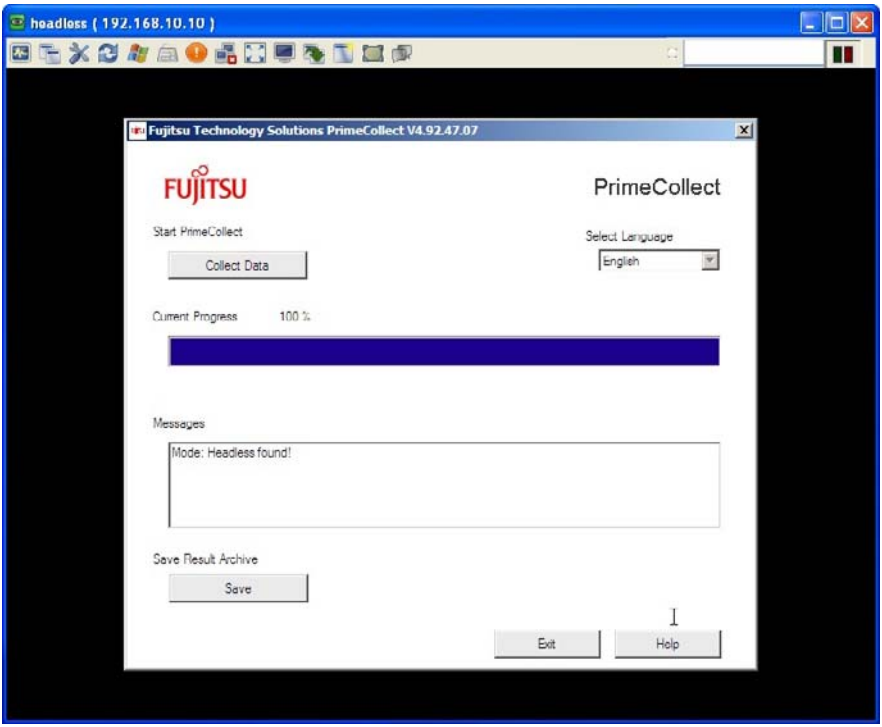


Figure 16: PrimeCollect - saving data (A)

When the data retrieval process is complete, the *Save* button will become available.

► Click *Save* to store the gathered system information.

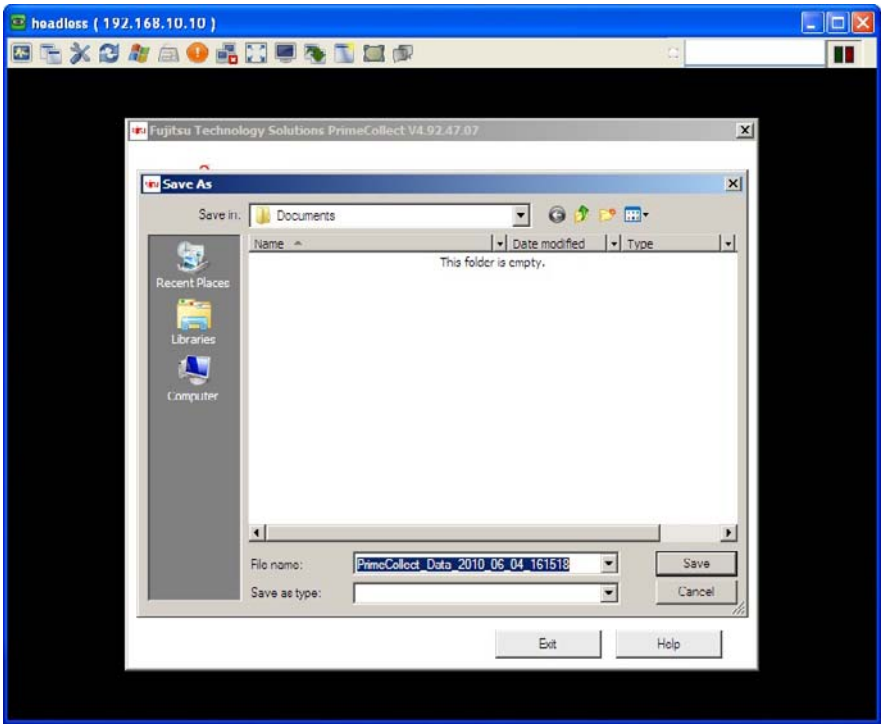


Figure 17: PrimeCollect - saving data (B)

► Click *Save*.

– Use the preset storage folder on RAM drive X: *X:\Users\Public\Documents*

– Leave the default file name unchanged.

Transfering the PrimeCollect file to your client computer

► Click on the *File Transfer* icon in the VNC client menu bar:

Figure 18: VNC client menu bar

The VNC file transfer interface will open.

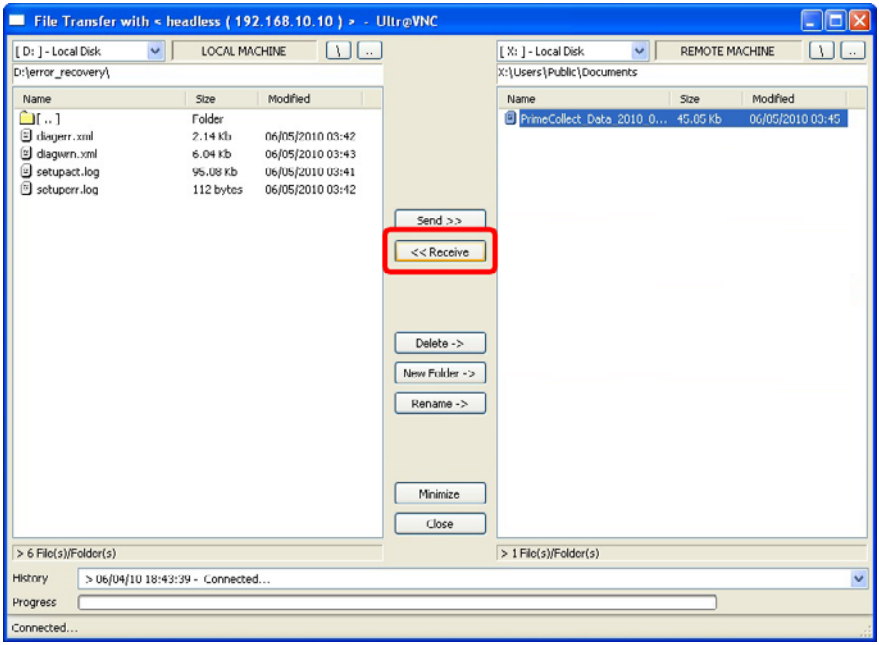


Figure 19: PrimeCollect - transfering data

- In the right column, point to the default storage folder *X:\Users\Public\Documents*.
- Locate and select the PrimeCollect file (zip-format) you have saved earlier.
- In the left column, select the destination directory on your local client system.
- Click *Receive* to transfer the PrimeCollect file to your local client system.
- Contact the Fujitsu Technology Solutions customer support to analyse the log files and recommend further measures.

Rebooting or shutting down the server

► Remove the Maintenance & Recovery DVD and close the DVD tray.

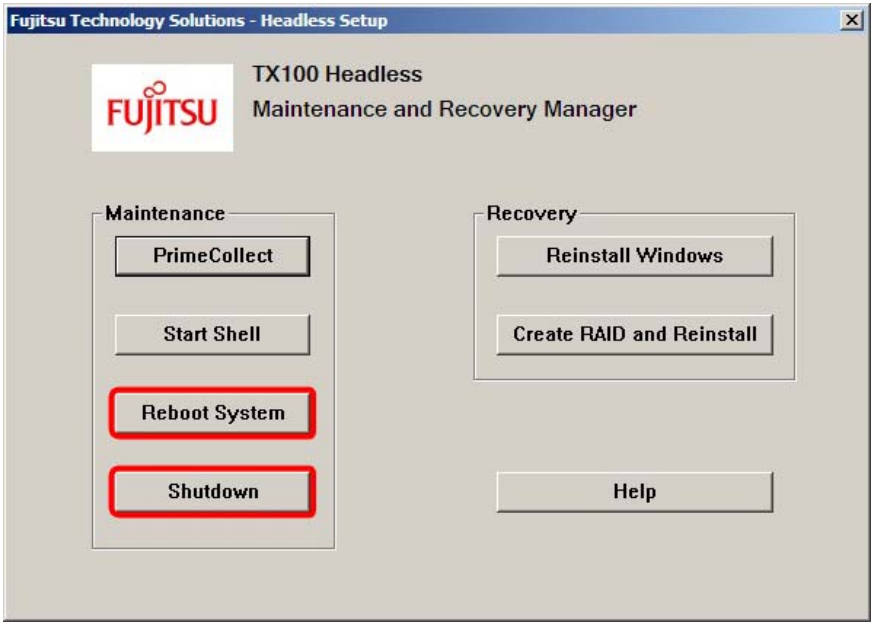


Figure 20: Maintenance and Recovery Manager user interface - reboot / shutdown

► Select *Reboot System* or *Shutdown* from the *Maintenance* section in the Maintenance and Recovery Manager menu to reboot your server into the operating system or shutting it down.

6.5 Recovering / resetting your server

There are two types of methods when recovering your PRIMERGY TX100 S3 Core Edition server:

– Recovering the operating system while preserving user data
This recovery option is described in section "Operating system recovery" on page 71.

– Recovering the operating system while restoring the server to factory settings
This recovery option is described in section "Factory reset" on page 73.

Note on backups

Fujitsu Technology Solutions cannot be held responsible for data loss due to hardware failure or system recovery. Ensure to schedule and perform regular backups of your data! Your responsibilities also include storing and maintaining backup media.

In order to design a backup schedule, either use your preferred backup solution or the backup and recovery features built right into Windows Server 2008 R2. Windows Server Backup helps you create backups and, if needed, perform a recovery of your operating system, applications, and data. By using these features appropriately and implementing good operational practices, you can improve your organization's ability to recover from lost data and hardware failures.

6.5.1 Operating system recovery

► Establish a VNC connection as described in section "Accessing the server using a VNC connection" on page 61.

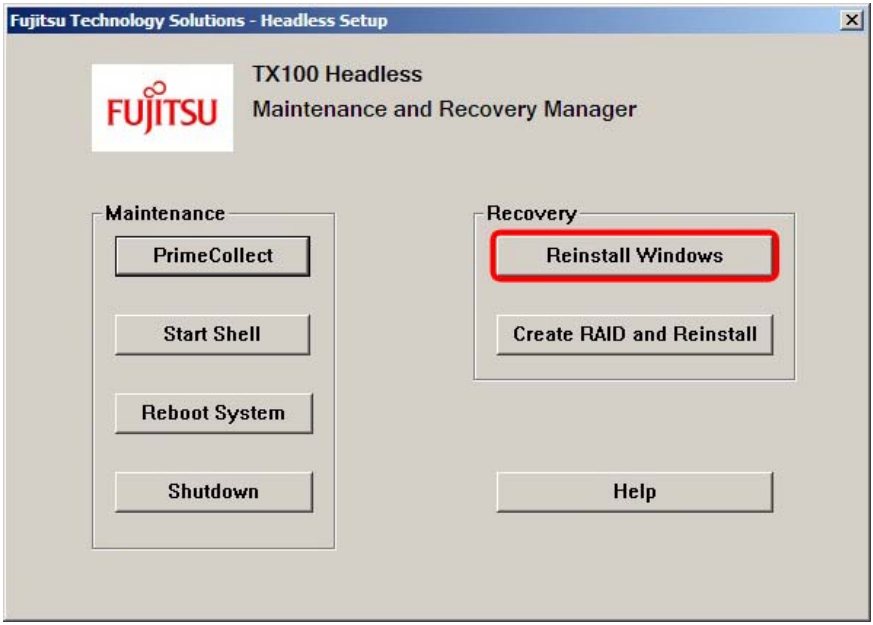


Figure 21: Maintenance and Recovery Manager user interface - operating system recovery

► Ensure that the Maintenance & Recovery DVD is in your DVD drive!

► If the default RAID or HDD configuration has been altered, please ensure that the system meets the minimum requirements for operating system recovery:

– a RAID 1 volume consisting of two hard disk drives

– two partitions on Disk 0 with the following capacities:

  – Primary partition: at least 50 GB
  – Recovery partition: at least 300 MB

  For Japanese market:

  – Primary partition: at least 32 GB
  – Recovery partition: at least 300 MB

► Select *Reinstall Windows* from the *Recovery* section in the Maintenance and Recovery Manager menu.

CAUTION!

– Please note that all data on the primary partition of your hard disk drive will be lost!

– Once the installation has been started, the device must not be switched off unless the DVD tray opens, indicating that the installation process is complete.

The recovery installation will be performed completely unattended. The server will reboot several times during the process. The VNC connection will be closed upon the first reboot and cannot be re-established until the installation is complete.

► Click *Yes* to choose a Japanese user interface and software environment after the installation process is complete.

Click *No* for the default English user interface environment.

► In order to initiate the installation process, confirm the warning message.

► Wait until the DVD tray opens, indicating that the installation process is complete. This will take about 45 minutes.

► Remove the Maintenance & Recovery DVD and close the DVD tray.

► Perform steps 3 through 5 in section "Initial operation" on page 48 in order to finalize the operating system installation and starting up your server.

6.5.2 Factory reset

► Establish a VNC connection as described in section "Accessing the server using a VNC connection" on page 61.

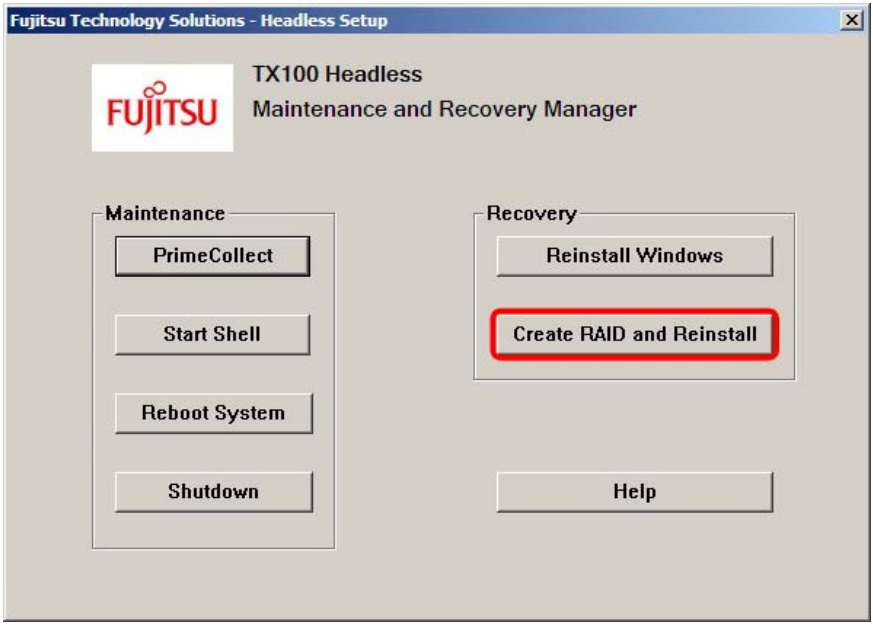


Figure 22: Maintenance and Recovery Manager user interface - Factory reset

► Ensure that the Maintenance & Recovery DVD is in your DVD drive!

► Select *Create RAID and Reinstall* from the *Recovery* section in the Maintenance and Recovery Manager menu.

CAUTION!

All user data will be lost when resetting your server. The existing RAID configuration including all partitions on all hard disk drives will be destroyed and replaced.

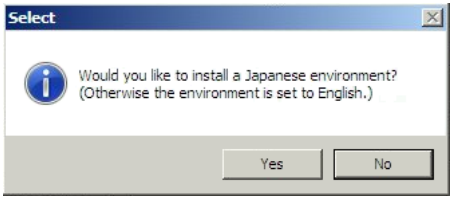
Ensure to backup your data before proceeding. If the operating system is no longer accessible, use the VNC File Transfer functionality to backup your files. The files will be transferred using the existing VNC connection.

For additional information on VNC File Transfer, please refer to section "Transfering the PrimeCollect file to your client computer" on page 67.

At least two hard disk drives must be installed when resetting your server. In order to prevent additional hard disk drives from being overwritten, proceed as described in section "Operating system recovery with 4-HDD configurations" on page 87.

- Click *Yes* to choose a Japanese user interface and software environment after the installation process is complete.

  Click *No* for the default English user interface environment.



- In order to initiate the rebuild and installation process, confirm the warning message.

  Once the installation has been started, the device must not be switched off unless the DVD tray opens, indicating that the installation process is complete.

  The RAID array rebuild and recovery installation will be performed completely unattended. The server will reboot several times during the process. The VNC connection will be closed upon the first reboot and can be re-established about three minutes later for a limited time to monitor the installation progress.

- Wait until the DVD tray opens, indicating that the installation process is complete.

  The system can now be used, however, data redundancy will not be available until the RAID array rebuild is complete. Depending on the hard disk drive capacity the overall process can take up to several hours.

- Remove the Maintenance & Recovery DVD and close the DVD tray.

- Perform steps 3 through 5 in section "Initial operation" on page 48 in order to finalize the operating system installation and starting up your server.

6.6 Configuring the onboard SATA controller

In order to configure the onboard SATA controller please proceed as follows:

After booting the operating system from HDD

- Establish a Remote Desktop connection as described in section 6.3.3 on page 49.
- Use ServerView RAID Manager to configure and manage your SATA controller and attached devices.

  For further information, please refer to the “ServerView Suite RAID Management“ user guide available on your ServerView Suite DVD 2 or from the Fujitsu Technology Solutions manuals server at *http://manuals.ts.fujitsu.com*. Point to *Industry Standard Servers - Software - ServerView Suite - Administration and Manageability - RAID Management*.

  For the Japanese market please use the following URL: *http://primeserver.fujitsu.com/primergy/manual/*

After booting the server from the Maintenance & Recovery DVD

- Click *Start Shell* to open the command line interface.
- Enter the ServerView RAID command `amcli.exe`.

  amCLI is a command line interface to ServerView RAID Manager. It can be used to create, delete or manage RAID arrays.

  For further information on amCLI, please refer to the “ServerView Suite RAID Management“ user guide available on your ServerView Suite DVD 2 or from the Fujitsu Technology Solutions manuals server at *http://manuals.ts.fujitsu.com*. Point to *Industry Standard Servers - Software - ServerView Suite - Administration and Manageability - RAID Management*.

  For the Japanese market please use the following URL: *http://primeserver.fujitsu.com/primergy/manual/*

6.7 Switching the server off

Switching off the server from the operating system

The Power-on indicator (item 1 in figure 5 on page 44) lights up green.

- ► Establish a Remote Desktop connection as described in section 6.3.3 on page 49.
- ► Shut down the operating system properly.

The server is switched off automatically.

If the operating system does not switch off the server automatically, press the On/Off button for at least five seconds to send a control signal for power button override.

Switching off the server from the Maintenance and Recovery Manager

See section "Rebooting or shutting down the server" on page 69.

6.8 Other On/Off options

Besides the On/Off button, the server can be switched ON and OFF in the following ways:

– **Timer-controlled switch-on/off**

  Using the ServerView Operations Manager, you can configure that the server is switched on/off controlled by the internal timer.

– **Wake up On LAN (WOL)**

  Allows the server to be switched on or woken up by a network command (Magic Packet™). WOL functionality is enabled in the BIOS by default.

– **After power failure**

  The server automatically reboots following a power failure.

– **Power button override**

  The system can be switched off by pressing and holding down the On/Off button (for approximately 5 seconds). The system remains in Off state.

  CAUTION!

  There is a risk that data may be lost.

6.9 Cleaning the server

CAUTION!

– Switch the server off and disconnect the power plugs from the properly grounded power outlets.

– Do not clean any interior parts yourself; leave this job to a service technician.

– Do not use any cleaning agents that contain abrasives or may corrode plastic.

– Ensure that no liquid enters the system. Ensure that the ventilation areas of the server and the monitor are clear.

– Do not use any cleaning sprays (including flammable types). It may cause a device failure or a fire.

Wipe the server with a dry cloth. If particularly dirty, use a cloth that has been moistened in a mild domestic detergent and then carefully wrung out.

7 Property and data protection

To prevent it being removed from its location, the server can be secured to a fixed object with a steel cable (or lock) running through a recess on the back (or side cover).

8 Troubleshooting and tips

CAUTION!

Follow the safety instructions in the "Safety notes and regulations" manual or " 安全上のご注意 " and in chapter "Important information" on page 25.

If a fault occurs, attempt to resolve it using the measures described:

– in this chapter,
– in the documentation for the connected devices,
– in the help systems of the software used.

If you fail to correct the problem, proceed as follows:

► Make a list of the steps performed and the circumstances that led to the fault. Also make a list of any error messages that were displayed.

► Switch off the server.

► Contact the Fujitsu Technology Solutions customer service team.

8.1 Power-on indicator remains dark

The power-on indicator remains dark after you switch on your device.

Power cords connected incorrectly

► Make sure that the power cord is correctly connected to the server and the grounded power outlet. For further information, refer to section "Connecting the server to the mains" on page 41.

Power supply overloaded

► Disconnect the server power plug from the grounded power outlet.

► Wait a few minutes before you reconnect the power plug to the grounded power outlet.

► Switch on your server.

8.2 Incorrect date and time

► Set the date and time in the operating system.

If the date and time are still wrong after the server has been switched off and back on again, replace the lithium battery (for a description refer to the "PRIMERGY TX100 S3 Upgrade and Maintenance Manual") or contact the Fujitsu Technology Solutions customer service team.

8.3 Optical drive not cannot read discs

► Ensure that the CD/DVD/BD is properly inserted into the optical drive with its label facing up.

► Check the CD/DVD/BD for dust or smudges. If necessary, carefully wipe down the disc with a soft, lint-free cloth.

► Check if the CD/DVD/BD is scratched, bent or otherwise damaged to the point of unreadability. In this case, replace the damaged disc.

8.4 Added drive reported as defective

The RAID controller is not configured for this drive.

► Use ServerView RAID Manager to reconfigure your RAID controller.

For further information, please refer to the "ServerView Suite RAID Management" user guide available on your ServerView Suite DVD 2 or from the Fujitsu Technology Solutions manuals server at *http://manuals.ts.fujitsu.com*. Point to *Industry Standard Servers - Software - ServerView Suite - Administration and Manageability - RAID Management*.

For the Japanese market please use the following URL: *http://primeserver.fujitsu.com/primergy/manual/*

Replace the hard disk drive if it continues to be reported as defective (see the "PRIMERGY TX100 S3 Core Edition Server" Upgrade and Maintenance Manual).

8.5 Services or directories / files on Headless server are no longer accessible for clients

One or more of the installed services on the Headless server do not work as expected or it is not possible to access shared folders on the Headless server from a client computer.

Services or shares have been changed / removed

- ► Establish a Remote Desktop connection to your Headless server as described in section 6.3.3 on page 49.
- ► Ask your system administrator if the configuration of services and shares is still correct.
- ► Use the Windows event log on your Headless server to identify and diagnose the source of current system problems.

Network connection problems

- ► Check the network cable between the client computer and the Headless server for proper connection.
- ► Ensure that the LAN activity LEDs on the Ethernet adapters of your client computer and Headless server indicate a successful connection.
- ► Try using a different network cable.
- ► Establish a direct connection between the client computer and the Headless server in order to rule out other network problems. Make sure to use a cross-over cable if your client is equipped with an Ethernet adapter that only supports connections at speeds up to 100 Mbit/s.

Headless server is powered off

- ► Check if the Headless server is powered off.
- ► If applicable, power on your Headless server.

8.6 ServerView Operations Manager reports errors

Server Management has detected an error

- Check the error list in the System Event Log using the ServerView Operations Manager and try to identify and resolve the problem.
- If the problem cannot be resolved, create log files using the PrimeCollect application available from the Windows Start menu on your Headless server (see section 6.4.2 on page 64) and contact the Fujitsu Technology Solutions customer service team for further analysis.

8.7 The server switches itself off

Server Management has detected an error

- Check the error list in the System Event Log using the ServerView Operations Manager and try to identify and resolve the problem.
- If the problem cannot be resolved, create log files using the PrimeCollect application available from the Windows Start menu on your Headless server (see section 6.4.2 on page 64) and contact the Fujitsu Technology Solutions customer service team for further analysis.
- If the server switches off before you get an opportunity to create log files, try accessing the Headless server using a VNC connection and create PrimeCollect log files as described in section 6.4.1 on page 61.

  Contact the Fujitsu Technology Solutions customer service team and forward the PrimeCollect log files for further analysis.

8.8 Remote Desktop connection fails

It is not possible to establish a Remote Desktop connection between the client computer and the Headless server.

- Ensure that the Headless server is powered on.
- Check the network cable between the client computer and the Headless server for proper connection.
- Ensure that the LAN activity LEDs on the Ethernet adapters of your client computer and Headless server indicate a successful connection.

  If your server boots into the operating system for the first time, ensure that your Headless server is connected to your network through its onboard Ethernet port 1 (see section "Connecting devices to the server" on page 40).
- If the Remote Desktop connection failed while connecting to your Headless server by its computer name, try establishing the connection by specifying its IP address (if available).
- Ensure that the Remote Desktop connection is not blocked by local firewall settings or a security suite on your client computer.
- Try to restart the Headless server by holding the On/Off button for one second. The server will then shut down properly and the power LED will turn off. Press the On/Off button again to reboot the Headless server and retry to establish a Remote Desktop connection.
- If the server remains inaccessible, it might be necessary to recover the operating system as described in section "Operating system recovery" on page 71.

8.9 VNC connection fails

It is no longer possible to establish a Remote Desktop connection or access any service or file on the Headless server. Not even a VNC connection can be established as described in section 6.4.1 on page 61.

- Ensure that the Headless server is powered on.
- Ensure that the Maintenance & Recovery DVD has been properly inserted into the DVD drive and that your Headless server has successfully booted as described. Strictly follow the further steps outlined in section "Accessing the server using a VNC connection" on page 61.
- Ensure that your Headless server is connected to your network through its onboard Ethernet port 1 (see section "Connecting devices to the server" on page 40) and that all additional LAN ports on expansion boards have been disconnected.
- Check the network cable between the client computer and the Headless server for proper connection.
- Ensure that the LAN activity LEDs on the Ethernet adapters of your client computer and Headless server indicate a successful connection.
- Use a direct network connection between client computer and Headless server instead of a switched network connection.
- Try using a different USB stick for establishing the VNC connection in order to rule out this potential source of error (see section "Accessing the server using a VNC connection" on page 61).
- Try accessing your Headless server from a different client computer in order to test the VNC connection.
- If the VNC Viewer should crash after it has been started, try restarting the viewer by double-clicking the *Recovery.cmd* file in the *Recovery* directory on your USB stick. You may have to repeat this procedure up to three times until the VNC connection is established.
- Contact the Fujitsu Technology Solutions customer service team if the problem persists.

8.10 Operating system recovery with 4-HDD configurations

The operating system cannot be recovered using the Reinstall Windows recovery option (see section "Operating system recovery" on page 71). A factory reset is inevitable, requiring at least two hard disk drives (IDs 0 and 1). However, user data stored on additional hard disk drives (IDs 2 and 3) can be preserved as follows:

- ► Carefully note down your RAID array configuration (RAID level) for the hard disk drives with IDs 2 and 3.

  This is a prerequisite for proceeding any further! If you cannot access your RAID array configuration you will not be able to recreate the original RAID array and preserve user data stored on the additional two hard disk drives.

- ► Terminate all applications and shut down the server.

  If the server does not shut down properly, press and hold the On/Off button for five seconds, until the server switches off.

- ► Disconnect the AC power cord from the system.
- ► Pull the locking lever and fold out the side cover.
- ► Unlatch and remove the side cover.
- ► Disconnect the SATA data cables of the hard disk drives you want to prevent from being overwritten (IDs 2 and 3) from the system board. The two SATA connectors are marked with "SATA 2" and "SATA 3".
- ► Latch the bottom edge of the side cover to the server chassis.
- ► Close the side cover until it locks in place.
- ► Reconnect the AC power cord.
- ► Power on your Headless server and establish a VNC connection as described in section "Accessing the server using a VNC connection" on page 61.

  Select *Create RAID and Reinstall* from the *Recovery* section in the Maintenance and Recovery Manager menu (see section "Factory reset" on page 73).

- ► After the rebuild and installation process is complete, shut down your server and reconnect the additional hard disk drives to SATA connectors "SATA 2" and "SATA 3" as described above.
- ► Complete the initial configuration of your Headless server as described in section "Initial operation" on page 48.
- ► Use the ServerView RAID Manager to recreate the RAID array including the two additional hard disk drives (IDs 2 and 3) according to the RAID configuration values you have noted down before resetting the Headless server.

  CAUTION!

  Before clicking the *Create* button, ensure that *Init mode* is set to *No initialization*! Otherwise the user data on the additional hard disk drives will be lost!

8.11 Power-on indicator reports an error

It is no longer possible to establish a Remote Desktop connection or access any service or file on the Headless server. Additionally the Power-on indicator reports an error by flashing continuously.

There are two different error states indicated by the the Power-on indicator:

The Power-on indicator flashes at a high frequency (2 Hz, twice every second).

This error state indicates that an error occurred during the early BIOS POST phase. The system is unable to finish the BIOS POST phase successfully due to an error involving the system board. Additionally a beep code might be audible. A typical error cause might be an improperly seated memory module. In order to resolve such problems, proceed as follows:

- ► Terminate all applications and shut down the server.

  If the server does not shut down properly, press and hold the On/Off button for five seconds, until the server switches off.
- ► Disconnect the AC power cord from the system.
- ► Pull the locking lever and fold out the side cover.
- ► Unlatch and remove the side cover.

- ► Ensure that all memory modules and expansion cards are properly seated in the slots.
- ► Ensure that all cables are connected correctly.
- ► Latch the bottom edge of the side cover to the server chassis.
- ► Close the side cover until it locks in place.
- ► Reconnect the AC power cord.
- ► Contact the Fujitsu Technology Solutions customer service team if the problem persists.

The power LED flashes at low frequency (1/2 Hz, once every two seconds)

This error state indicates that the system is not able to boot from its local hard disk drives. Typically, the server will then stop booting after the BIOS POST phase displaying an error message like "Operating System not found". In order to resolve the problem, proceed as follows:

- ► Terminate all applications and shut down the server.

  If the server does not shut down properly, press and hold the On/Off button for five seconds, until the server switches off.

- ► Disconnect the AC power cord from the system.
- ► Pull the locking lever and fold out the side cover.
- ► Unlatch and remove the side cover.
- ► Ensure that all data and power cables on the hard disk drives are connected correctly.
- ► Ensure that all HDD SATA cables are connected correctly to the system board.
- ► Latch the bottom edge of the side cover to the server chassis.
- ► Close the side cover until it locks in place.
- ► Reconnect the AC power cord.
- ► If the problem cannot be resolved, try booting the server from the Maintenance & Recovery DVD, establish a VNC connection and create PrimeCollect log files as described in section 6.4.1 on page 61.
- ► Contact the Fujitsu Technology Solutions customer service team and forward the PrimeCollect log files for further analysis.